

A1

conc.

5. (Amended) A method for inspecting a semiconductor wafer surface according to Claim 1, wherein the forms and types of defects and the like are determined depending on a combination of A, B, and a value given by A/B, where the detected light intensity or standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the detected light intensity or standard particle conversion size of the LPD detected in a low-angle light optic is B.

6.

(Amended) A method for inspecting a semiconductor wafer surface according to Claim 1, wherein the forms and types of defects and the like are determined based on Table 1, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

Table 1

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1 . 13$	Stacking Fault
$A < B \times 1 . 13$	Non-epi-layer originated extraneous substance (adherent particle)
$B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Micro-crystallographic-defect (hillock, shadow, dislocation)
$B > 160 \text{ nm}$ and $A < 107 \text{ nm}$	Abnormal growth (large-pit, projection)
Others	Abnormal product

7. (Amended) A method for inspecting a semiconductor wafer surface according to

Claim 1, wherein the semiconductor wafer is a mirror-finished semiconductor wafer.

Aa

9. A method for inspecting a semiconductor wafer surface according to Claim 1, wherein the forms and types of defects and the like are determined based on Table 2, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light

A2  
conc.

optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

Table 2

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1.13$ or $B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Scratch, flaw, and shallow pit
$A < B \times 1.13$	Adherent particle or COP
$B \leq 85 \text{ nm}$ and $A < 107 \text{ nm}$	Grown-in defect in bulk near surface

Please add the following new claims:

A3

10. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein a laser surface inspection apparatus having at least two light optics to one incidence is used as a laser surface inspection apparatus.

11. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein the semiconductor wafer is an epitaxial semiconductor wafer.

12. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein the forms and types of defects and the like are determined depending on a combination of A, B, and a value given by A/B, where the detected light intensity or standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the detected light intensity or standard particle conversion size of the LPD detected in a low-angle light optic is B.

13. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein the forms and types of defects and the like are determined based on Table 1, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light

A3  
Cont.

optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

Table 1

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1 . 13$	Stacking Fault
$A < B \times 1 . 13$	Non-epi-layer originated extraneous substance (adherent particle)
$B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Micro-crystallographic-defect (hillock, shadow, dislocation)
$B > 160 \text{ nm}$ and $A < 107 \text{ nm}$	Abnormal growth (large-pit, projection)
Others	Abnormal product

14. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein the semiconductor wafer is a mirror-finished semiconductor wafer.

15. A method for inspecting a semiconductor wafer surface according to Claim 14, wherein the forms and types of defects and the like are determined depending on a combination of A, B, and a value given by A/B, where the detected light intensity or standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the detected light intensity or standard particle conversion size of the LPD detected in a low-angle light optic is B.

16. A method for inspecting a semiconductor wafer surface according to Claim 2, wherein the forms and types of defects and the like are determined based on Table 2, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

A3  
cont.

Table 2

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1 . 13$ or $B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Scratch, flaw, and shallow pit
$A < B \times 1 . 13$	Adherent particle or COP
$B \leq 85 \text{ nm}$ and $A < 107 \text{ nm}$	Grown-in defect in bulk near surface

17. A method for inspecting a semiconductor wafer surface according to Claim 7, wherein the forms and types of defects and the like are determined based on Table 2, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

Table 2

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1 . 13$ or $B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Scratch, flaw, and shallow pit
$A < B \times 1 . 13$	Adherent particle or COP
$B \leq 85 \text{ nm}$ and $A < 107 \text{ nm}$	Grown-in defect in bulk near surface

18. A method for inspecting a semiconductor wafer surface according to Claim 14, wherein the forms and types of defects and the like are determined based on Table 2, where the standard particle conversion size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the standard particle conversion size of the LPD detected in a low-angle light optic is B.

Table 2

Relations between A and B or ranges	Actual for ms
$A \geq B \times 1 . 13$ or $B < 90 \text{ nm}$ and $A > 107 \text{ nm}$	Scratch, flaw, and shallow pit
$A < B \times 1 . 13$	Adherent particle or COP
$B \leq 85 \text{ nm}$ and $A < 107 \text{ nm}$	Grown-in defect in bulk near surface

A3  
conc.

19. A method for inspecting a semiconductor wafer surface according to Claim 10,  
wherein the semiconductor wafer is an epitaxial semiconductor wafer.

20. A method for inspecting a semiconductor wafer surface according to Claim 10,  
wherein the forms and types of defects and the like are determined depending on a combination of  
A, B, and a value given by A/B, where the detected light intensity or standard particle conversion  
size of a LPD (Light Point Defect) detected in a high-angle light optic is A, while the detected  
light intensity or standard particle conversion size of the LPD detected in a low-angle light optic is  
B.

OSSIESEN "OSSIESEN"